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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,332	01/16/2002	Mehmet Aslan	50019.81USU1/P05006	7971

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EXAMINER

DEJESUS, LYDIA M

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

10,051,332



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO. <i>As</i>
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EXAMINER

ART UNIT	PAPER
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Commissioner of Patents and Trademarks

Office Action Summary

Application No.

10/051,332

Applicant(s)

ASLAN ET AL.

Examiner

Lydia M. De Jesús

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 9-14 is/are rejected.
- 7) ☒ Claim(s) 2-5, 8 and 15-22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed April 25, 2002 has been placed of record and the references cited therein have been considered.

Said papers filed on >April 25, 2002< (certificate of mailing dated >April 16, 2002<) have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process. The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS ORIGINALLY FILED

If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Center's Customer Service Center to inquiry about the completeness or accuracy of Office's copy of the above-identified papers, as the Technology Center's Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

Claim Objections

2. Claims 1-4, 19-22 are objected to because of the following informalities:

a) There is insufficient antecedent basis for the limitations “the remote sensor circuit” and “the programmable current source” recited in claim 1;

b) The language of claim 1 is objected to because the terms “a first control signal”, “second control signal”, “third control signal”, and “fourth control signal” with the corresponding descriptions appear to be listed as structural elements of the claimed system, whereas these limitations correspond, according to the disclosure, to steps in the operation of the claimed device. It should be noted that this language, although proper, fails to clearly set forth which structural element of the claimed system generates said control signals. Please clarify.

c) Examiner suggests to further clarify the language of claims 2 through 4 complementing the terms “value(s)” and “average(s)” with the corresponding parameter that is intended to be referred to. For example, to read “voltage value(s)” or “temperature average(s)”, where appropriate.

d) Claims 19 through 22 are objected to because the body of the claim describes an apparatus or device, whereas the claim preamble is directed to a method. During a telephone conversation with Mr. Hennings on January 30, 2003, it was verified that these claims were intended by Applicant to be directed to a system for determining a temperature from a remote sensor. For the purpose of addressing said claims in the present action, they shall be interpreted as apparatus claims, pending appropriate correction by the Applicant.

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e) In general, Applicant's cooperation is requested for reviewing the use of *--a or an--* and *--said or the--* in the claim language to ensure proper antecedent basis for the limitations in the claims and also to avoid the appearance of claiming a duplicate structure not presented in the disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hinrichs et al.
[hereinafter Hinrichs].

Hinrichs discloses a system for determining temperature from a remote sensor [12] that includes a PN junction [Q10, Q11], comprising: a programmable current circuit [20] that is coupled to the remote sensor circuit [12] such that it provides a bias current to the PN junction when activated; a converter that includes an input that is coupled to the remote sensor and an

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output that is configured to provide values that correspond to a voltage across the PN junction; and a processor that is coupled to the output of the converter.

With respect to the limitations regarding the control signals and steps to process the signals from the PN junction: These limitations, although proper, are insufficient to patentably distinguish the claimed system from the system disclosed by Hinrichs since the disclosed system meets the structural limitations of the system recited in claim 1 and further is considered capable of performing the steps recited in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aslan et al. (U.S. Patent 6,149,299, hereinafter Aslan).

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Aslan discloses a method of determining a temperature from a remote sensor (see column 8), comprising: producing a first current level $[I_1]$; producing a second current level $[I_2]$ that is different from the first current level (see lines 6-8 of column 8); applying a sequence of the first and second current levels to the remote sensor circuit at a first time (see lines 8-24 of column 8); measuring first voltages $[V_{o1}]$ from the remote sensor circuit when the first current level is applied; measuring second voltages $[V_{o2}]$ from the remote sensor when the second current level is applied; determining a temperature value from the first and second measured voltages (see equation 10).

With respect to the limitation “wherein the sequence is selected from a random sequence, a pseudorandom sequence, and an order sequence, wherein the ordered sequence comprises a first selected current level that is applied at a first and last time and a second selected current level that is applied at a second an next-to-last time”: Aslan discloses the step of performing two sequential measurements in order to eliminate the error term. Therefore, Aslan discloses an ordered sequence. Moreover, Aslan teaches that two separate measurement sequences may be used to determine the value of the noise voltage, in order to eliminate the error term. Therefore, one of ordinary skill in the art at the time the invention was made would consider the particular order sequences options recited for the claimed method to be an obvious modification to the method of Aslan, as taught by Aslan, that will allow resolving the same problem of eliminating the error term in the equation for determining the temperature measured by the sensor.

8. Claims 1, 6,7,9,10,11, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miranda Jr., et al. [hereinafter Miranda] in view of Davidson et al. [hereinafter Davidson].

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Miranda discloses a decoupled switched current temperature circuit comprising a temperature sensor that includes a PN junction [16]; a programmable current circuit [12] that is coupled to the remote sensor circuit such that the programmable current circuit provides a bias current to the PN junction [16] when activated, wherein the bias current has an associated level that is selected from at least a first level [from current source 30] and a second current level [from current source 32]. Said sensor is remote from the programmable current circuit (see lines 61-663 of column 1). Said current circuit comprises a plurality of current sources that are configured to selectively produce the first and second current levels, in this case, a first current source [30] that is arranged to selectively produce the first current level and a second current source [32] that is arranged to selectively produce the second current level. The first current level and the second current level are related to one another by a ratio having a value that is greater than one.

Miranda fails to disclose a converter that includes an input that is coupled to the remote sensor, and an output that is configured to provide values that correspond to a voltage across the PN junction; and a processor that is coupled to the output of the converter, wherein the processor calculates a temperature value in response to the values provided by the converter.

However, Davidson teaches that it is very well known in a temperature measuring system having a PN junction i.e., diode, as the sensor, to couple the diode to a converter [36] configured to provide values that correspond to a voltage across the diode and a processor [37] that is coupled to the output of the converter to calculate a temperature value in response to the values provided by the converter.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the decoupled switched current temperature circuit of Miranda with a converter coupled to the remote sensor and a processor coupled to the converter, as taught by Davidson, in order to generate a temperature value based on the voltage across the PN junction.

With respect to the limitations regarding the coordination of control signals in the first through fourth times and the limitations recited in claims 9, 10, 12 and 13: Said limitations, although proper, are insufficient to patentably distinguish the claimed system from the system resulting from the combination of Miranda and Davidson because they are directed to method steps in the operation of said system instead of structural elements of said system. Furthermore, the system resulting from the combination of Miranda and Davidson is considered capable of performing said steps.

Allowable Subject Matter

9. Claims 5, 8 and 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 2-4 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. Claim 19 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

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Claims 20-22, due to their dependence upon the language of claim 19, would be allowable if rewritten to overcome the objection(s) set forth in this Office action, once claim 19 is corrected.


Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tuthill discloses a switched current temperature circuit with compounded ΔV_e . Braun et al. disclose a method for determining the temperature of a semiconductor component.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lydia M. De Jesús whose telephone number is (703) 306-5982. The examiner can normally be reached on 12:30 to 8:00 p.m., Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (703) 308-3875. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



Diego F.F. Gutierrez
Supervisory Patent Examiner
Technology Center 2800

LDJ
January 30, 2003